

### **Amendments to the Claims**

Please amend the claims without prejudice. The listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of the Claims**

- [c1] (Original) A method for determining a downhole parameter in a drilling environment, comprising:  
activating, by an activation device (6), drilling fluid flowing past the activation device;  
turning off the activation device (6) for a time sufficient to create an unactivated slug of drilling fluid;  
detecting the unactivated drilling fluid slug at a known distance (d) from the activation device (6); and  
determining a time-of-flight (t) for the unactivated drilling fluid slug to travel the distance (d).
- [c2] (Original) The method of claim 1, further comprising calculating drilling fluid velocity from the time-of-flight (t) and the known distance (d).
- [c3] (Original) The method of claim 2, wherein calculating the fluid velocity includes using a rate-of-penetration correction.
- [c4] (Original) The method of claim 1, further comprising calculating borehole volume over the distance (d) using a known surface volumetric flow rate.
- [c5] (Original) The method of claim 4, further comprising calculating a borehole diameter from the borehole volume.
- [c6] (Original) The method of claim 1, further comprising calculating a downhole volumetric flow rate from the time-of-flight (t) and a known borehole volume.
- [c7] (Currently amended) The method of ~~any of~~ claims 1-6, wherein the method is performed using a logging-while-drilling tool.

- [c8] (Currently amended) The method of ~~any of~~ claims 1-7, wherein the fluid flowing past the activation device is flowing toward a surface location.
- [c9] (Currently amended) The method of ~~any of~~ claims 1-8, wherein the unactivated drilling fluid slug is detected using a gamma ray detector located in a drill string tool the distance d from the activation device.
- [c10] (Original) The method of claim 1 wherein the distance d is chosen such that the unactivated drilling fluid slug is detected within about 30 seconds from when it passes the activation device.
- [c11] (Original) A tool for determining a downhole parameter in a drilling environment, wherein the tool is adapted to be placed in a drill string and wherein the tool comprises a activation device (6) and a gamma ray detector (7) separated along a drill string axis thereof by a distance d, the tool further comprising:  
control circuitry to turn off the activation device (6) for a time sufficient to create an unactivated slug of drilling fluid flowing past the tool; and  
processing means (17), coupled to the gamma ray detector (7), for determining when the unactivated slug of drilling fluid flows past the gamma ray detector (7).
- [c12] (Original) The tool of claim 11, wherein the processing means further determines a time-of-flight (t) for the unactivated drilling fluid slug to travel the distance (d).
- [c13] (Original) The tool of claim 12, wherein the processing means is configured to calculate drilling fluid velocity from the time-of-flight (t) and the known distance (d).
- [c14] (Original) The tool of claim 11, wherein the processing means is configured to calculate borehole volume over the distance (d) using a known volumetric flow rate.
- [c15] (Original) The tool of claim 14, wherein the processing means is configured to calculate a borehole diameter from the borehole volume.
- [c16] (Original) The tool of claim 12, wherein the processing means is configured to calculate a downhole volumetric flow rate from the time-of-flight (t) and a known borehole volume.

**[c17]** (Currently amended) The tool of ~~any of~~ claims 11-16, wherein the tool comprises a logging-while-drilling tool.

**[c18]** (Currently amended) The tool of ~~any of~~ claims 11-17, wherein the fluid flowing past the activation device is flowing outside the tool.